

DRAFT ENVIRONMENTAL IMPACT REPORT  
CITY OF GLENDALE BIOGAS RENEWABLE GENERATION PROJECT

ENVIRONMENTAL IMPACT ANALYSIS

## 4.4 ENERGY

### Acronyms

AB	Assembly Bill
ASHRAE	American Society of Heating and Air-Conditioning Engineers
CAFE	Corporate Average Fuel Economy
CALGreen Code	California Green Building Standards
CARB	California Air Resources Board
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
cf	Cubic feet
CPUC	California Public Utilities Commission
EIR	Environmental Impact Report
GHG	Greenhouse gas
GWh	Gigawatt-hour
GWP	Glendale Power and Water
hp	Horsepower
HSC	Health and Safety Code
kWh	Kilowatt-hour
LFG	Landfill gas
MPO	Metropolitan Planning Organization
MW	Megawatts
MWh	Megawatt-hour
NG	Natural gas
NHTSA	National Highway Traffic Safety Administration
PRC	Public Resources Code
RPS	Renewable Portfolio Standards
RTP	Regional Transportation Plan
SB	Senate Bill
SCAG	Southern California Association of Governments
SCLF	Scholl Canyon Landfill
SCS	Sustainable communities strategy
USEPA	U.S. Environmental Protection Agency
VMT	Vehicle miles travelled
W	Watts
Wh	Watt-hours



## ENVIRONMENTAL IMPACT ANALYSIS

Section 21100(b)(3) and described in Appendix F to the Guidelines for the Implementation of the California Environmental Quality Act (CEQA) 14 California Code of Regulations [CCR]§§ 15000 et seq.). Section 21100(b) of the State *CEQA Guidelines* (CEQA Guidelines) requires that an Environmental Impact Report (EIR) include a detailed statement setting forth mitigation measures proposed to minimize a project's significant effects on the environment, including, but not limited to, measures to reduce the wasteful, inefficient, and unnecessary consumption of energy. Appendix F of the CEQA Guidelines states that, in order to ensure that energy implications are considered in project decisions, the potential energy implications of a project shall be considered in an EIR, to the extent relevant and applicable to a project.

In accordance with the intent of Appendix F of the CEQA Guidelines, this Draft EIR analyzes the energy implications of the proposed Project, focusing on the following three energy resources: electricity, natural gas, and transportation-related energy (petroleum-based fuels). This section includes a summary of the proposed Project's anticipated energy needs (which can be found in Appendix B), impacts, and conservation measures. Information found herein, as well as other aspects of the proposed Project's energy implications, are discussed in greater detail elsewhere in this Draft EIR, including in Sections 2.0, Project Description, 4.6, Greenhouse Gas Emissions, and 4.11, Transportation.

### 4.4.1 Environmental Setting

#### 4.4.1.1 Existing Conditions

##### Electricity

Electricity, a consumptive utility, is a man-made resource. The production of electricity requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for on-site distribution and use. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid. Conveyance of electricity through transmission lines is typically responsive to market demands.

Energy capacity, or electrical power, is generally measured in watts (W) while energy use is measured in watt-hours (Wh). For example, if a light bulb has a capacity rating of 100 W, the energy required to keep the bulb on for one hour would be 100 Wh. If ten 100 W bulbs were on for one hour, the energy required would be 1,000 Wh or one kilowatt-hour (kWh). On a utility scale, a generator's capacity is typically rated in megawatts (MW), which is one million watts, while energy usage is measured in megawatt-hours (MWh) or gigawatt-hours (GWh), which is one billion watt-hours.

Glendale Water and Power (GWP) provides electrical service throughout the City of Glendale, including the proposed Project site, serving approximately 205,536 residents across an approximately 31-square mile area. GWP serves nearly 89,000 electrical customers and provides service to the homes, businesses and institutions within its service area. GWP's annual retail electrical load obligation is approximately 1.4 MWh. As provided in GWP's 2019 Integrated Resources Plan, the City currently relies on the Grayson Power Plant to provide electricity; however, GWP is retiring 173 MW of natural gas steam, combined



**DRAFT ENVIRONMENTAL IMPACT REPORT  
CITY OF GLENDALE BIOGAS RENEWABLE GENERATION PROJECT**

**ENVIRONMENTAL IMPACT ANALYSIS**

cycle, and combustion turbine capacity in 2021. GWP has developed a power plan<sup>35</sup> to meet power reliability requirements, which includes a mix of clean energy and load reduction, imported renewable resources (solar and wind), a battery energy storage system, and conventional internal combustion generation.

**kilowatts per hour Natural Gas**

Natural gas (NG) is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. NG consumed in California is obtained from naturally occurring reservoirs, mainly located outside the State, and delivered through high-pressure transmission pipelines. The NG transportation system is a nationwide network, and, therefore, resource availability is typically not an issue. NG provides almost one-third of the state's total energy requirements and is used in electricity generation, space heating, cooking, water heating, industrial processes, and as a transportation fuel. NG is measured in terms of cubic feet (cf).

SoCalGas is the principal distributor of NG in Southern California, serving residential, commercial, and industrial markets. SoCalGas serves approximately 21.8 million customers in more than 500 communities encompassing approximately 24,000 square miles throughout Central and Southern California, from the City of Visalia to the Mexican border.<sup>36</sup>

SoCalGas receives gas supplies from several sedimentary basins in the western United States and Canada, including supply basins located in New Mexico (San Juan Basin), West Texas (Permian Basin), the Rocky Mountains, and Western Canada as well as local California supplies. The traditional, southwestern United States sources of natural gas will continue to supply most of SoCalGas' natural gas demand. The Rocky Mountain supply is available but is used as an alternative supplementary supply source, and the use of Canadian sources provide only a small share of SoCalGas supplies due to the high cost of transport. Gas supply available to SoCalGas from California sources averaged 323 million cf per day in 2017 (the most recent year for which data are available).<sup>37</sup>

**Transportation Energy**

According to the California Energy Commission (CEC), transportation accounts for nearly 37 percent of California's total energy consumption in 2014.<sup>38</sup> In 2016, California consumed 15.6 billion gallons of gasoline and 3.1 billion gallons of diesel fuel.<sup>39</sup> Petroleum-based fuels currently account for more than 90 percent of California's transportation fuel use.<sup>40</sup> However, the state is now working on developing flexible

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<sup>35</sup> City of Glendale Water and Power 2019 Integrated Resources Plan, Adopted July 23, 2019. Available at: <https://www.glendaleca.gov/home/showdocument?id=51814>. Accessed August 2019.

<sup>36</sup> SoCalGas, Company Profile. Available at: <http://www.socalgas.com/about-us/company-info.shtml>. Accessed August 2019.

<sup>37</sup> California Gas and Electric Utilities, 2018 California Gas Report. Available at: [https://www.socalgas.com/regulatory/documents/cgr/2018\\_California\\_Gas\\_Report.pdf](https://www.socalgas.com/regulatory/documents/cgr/2018_California_Gas_Report.pdf). Accessed August 2019.

<sup>38</sup> California Energy Commission 2016 Integrated Energy Policy Report, Docketed February 28, 2017. Available at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=16-IEPR-01>. Accessed August 2019. Based on the transportation sector accounting for 37 percent of the state's GHG emissions in 2014.

<sup>39</sup> California Department of Fee and Tax Administration, Fuel Taxes Statistics and Reports. Available at: <https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm>. Accessed August 2019.

<sup>40</sup> California Energy Commission, 2016-207 Investment Plan Updated for the Alternative and Renewable Fuel and Vehicle Technology Program, May 2016. Available at: <http://www.energy.ca.gov/2015publications/CEC-600-2015-014/CEC-600-2015-014-CMF.pdf>. Accessed August 2019.



## ENVIRONMENTAL IMPACT ANALYSIS

strategies to reduce petroleum use. Over the last decade, California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and greenhouse gas (GHG) from the transportation sector, and reduce vehicle miles travelled (VMT). Accordingly, gasoline consumption in California has declined. The CEC predicts that the demand for gasoline will continue to decline over the next ten years, and there will be an increase in the use of alternative fuels, such as NG, biofuels and electricity.<sup>41</sup>

The Project site is currently developed with the landfill gas (LFG) collection system and associated facilities. Therefore, existing daily trips are associated with current site maintenance activities and are considered part of the baseline conditions in this analysis.

### 4.4.2 Laws, Ordinances, Regulations and Standards

#### 4.4.2.1 Federal

##### Federal Corporate Average Fuel Economy Standards

First established by the U.S. Congress in 1975, the Corporate Average Fuel Economy (CAFE) standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA) jointly administer the CAFE standards. The U.S. Congress has specified that CAFE standards must be set at the “maximum feasible level” with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.<sup>42</sup>

Fuel efficiency standards for medium- and heavy-duty trucks have been jointly developed by USEPA and NHTSA. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018 and result in a reduction in fuel consumption from six to 23 percent over the 2010 baseline, depending on the vehicle type.<sup>43</sup> The USEPA and NHTSA also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through 2027 and require the phase-in of a five to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type.<sup>44</sup>

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<sup>41</sup> California Energy Commission 2015 Integrated Energy Policy Report, Docketed June 29, 2016. Available at: [https://ww2.energy.ca.gov/2015\\_energypolicy/](https://ww2.energy.ca.gov/2015_energypolicy/). Accessed August 2019.

<sup>42</sup> National Highway Transportation Safety Administration, Laws and Regulations, Corporate Average Fuel Economy. Available at: [https://ww2.energy.ca.gov/2015\\_energypolicy/](https://ww2.energy.ca.gov/2015_energypolicy/). Accessed August 2019.

<sup>43</sup> United States Environmental Protection Agency, Fact Sheet: EPA and NHTSA Adopt First-Ever Program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles, August 2011. Available at: <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100BOT1.PDF?Dockey=P100BOT1.PDF>. Accessed August 2019.

<sup>44</sup> United States Environmental Protection Agency, Federal Register/Vol. 81, No. 206/Tuesday, Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2, October 25, 2016. Available at: <https://www.gpo.gov/fdsys/pkg/FR-2016-10-25/pdf/2016-21203.pdf>. Accessed August 2019.



ENVIRONMENTAL IMPACT ANALYSIS

**4.4.2.2 State**

California Building Standards Code (Title 24)  
*California Building Energy Efficiency Standards (Title 24, Part 6)*

The California Building Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR, Title 24, Part 6) were adopted to ensure that building construction and system design and installation achieve energy efficiency and preserve outdoor and indoor environmental quality. The current California Building Energy Efficiency Standards (Title 24 standards) are the 2016 Title 24 standards, which became effective on January 1, 2017.<sup>45</sup> The 2016 Title 24 standards include efficiency improvements to the residential standards for attics, walls, water heating, and lighting, and efficiency improvements to the non-residential standards include alignment with the American Society of Heating and Air-Conditioning Engineers (ASHRAE) 90.1-2013 national standards.<sup>46</sup>

*California Green Building Standards (Title 24, Part 11)*

The California Green Building Standards Code (CCR, Title 24, Part 11), commonly referred to as the CALGreen Code, most recently went into effect on January 1, 2017. The 2016 CALGreen Code includes mandatory measures for non-residential development related to site development; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality.<sup>47</sup> Most mandatory measure changes, when compared to the previously applicable 2013 CALGreen Code, were related to the definitions and to the clarification or addition of referenced manuals, handbooks, and standards. Refer to Section 4.6, Greenhouse Gas Emissions, of this Draft EIR for additional details regarding these standards.

California's Renewable Portfolio Standard

First established in 2002 under Senate Bill 1078, California Renewable Portfolio Standards (RPS) require retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent by 2020 and 50 percent by 2030.<sup>48</sup> The California Public Utilities Commission (CPUC) and the CEC jointly implement the RPS program. The CPUC's responsibilities include: (1) determining annual procurement targets and enforcing compliance; (2) reviewing and approving each investor-owned utility's renewable energy procurement plan; (3) reviewing contracts for RPS-eligible energy; and (4) establishing the standard terms and conditions used in contracts for eligible renewable energy.<sup>49</sup>

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<sup>45</sup> California Energy Commission, 2016 Building Energy Efficiency Standards. Available at: <http://www.energy.ca.gov/title24/2016standards/>. Accessed August 2019.

<sup>46</sup> California Energy Commission, 2016 Building Energy Efficiency Standards for Residential and Nonresidential Buildings, June 2015. Available at: <http://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf>. Accessed August 2019.

<sup>47</sup> California Building Standards Commission, Guide to the 2016 California Green Building Standards Code Nonresidential, January 2017. Available at: <https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen>. Accessed August 2019.

<sup>48</sup> California Public Utilities Commission, California Renewables Portfolio Standard (RPS), 2018. Available at: [http://www.cpuc.ca.gov/RPS\\_Homepage/](http://www.cpuc.ca.gov/RPS_Homepage/). Accessed August 2019.

<sup>49</sup> California Public Utilities Commission, RPS Program Overview, 2018. Available at: [http://www.cpuc.ca.gov/RPS\\_Overview/](http://www.cpuc.ca.gov/RPS_Overview/). Accessed August 2019.



## ENVIRONMENTAL IMPACT ANALYSIS

### Assembly Bill 32 /California Global Warming Solutions Act

In 2006, the California State Legislature adopted Assembly Bill (AB) 32 (codified in the California Health and Safety Code [HSC], Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. Under HSC Division 25.5, the California Air Resources Board (CARB) has the primary responsibility for reducing the State's GHG emissions, however, it also tasked CEC and the CPUC with providing information, analysis, and recommendations to CARB regarding strategies to reduce GHG emissions in the energy sector.

In 2016, the California State Legislature adopted Senate Bill (SB) 32 and its companion bill AB 197; both were signed by Governor Brown. SB 32 and AB 197 amend HSC Division 25.5 and establishes a new climate pollution reduction target of 40 percent below 1990 levels by 2030 and includes provisions to ensure that the benefits of state climate policies reach into disadvantaged communities.

### Senate Bill 350 /Clean Energy and Pollution Reduction Act of 2015

SB 350, signed October 7, 2015, is the Clean Energy and Pollution Reduction Act of 2015. SB 350 is the implementation of some of the goals of Executive Order B-30-15, issued in April 2015, which established a new statewide policy goal to reduce GHG emissions 40 percent below their 1990 levels by 2030. The objectives of SB 350 are 1) to increase the procurement of our electricity from renewable sources from 33 percent to 50 percent; and 2) to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation by 2030.<sup>50</sup>

### Senate Bill 100 /100 Percent Clean Energy Act of 2018

SB 100, signed September 10, 2018, is the 100 Percent Clean Energy Act of 2018. SB 100 updates the goals of California's RPS and SB 350, discussed above, in the following ways: 1) achieve the 50 percent renewable resources target by December 31, 2026, and 2) achieve a 60 percent target by December 31, 2030. SB 100 also requires that eligible renewable energy resources and zero-carbon resources supply 100 percent of electricity procured to serve all state agencies by December 31, 2045.<sup>51</sup>

### Assembly Bill 1493 (/Pavley Regulations

AB 1493 (commonly referred to as CARB's Pavley Regulations) was the first legislation to regulate GHG emissions from new passenger vehicles. Under this legislation, CARB adopted regulations to reduce GHG emissions from non-commercial passenger vehicles (cars and light-duty trucks) for model years 2009–2016 and model years 2017-2025.<sup>52,53</sup>

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<sup>50</sup> California Legislative Information, SB 350 (2015-2016 Regular Session) Stats 2015, Chapter 547. Available at: [https://leginfo.ca.gov/faces/billNavClient.xhtml?bill\\_id=201520160SB350](https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350). Accessed August 2019.

<sup>51</sup> California Legislative Information, SB 100 (2017-2018 Regular Session) Stats 2018, Chapter 312. Available at: [https://leginfo.ca.gov/faces/billNavClient.xhtml?bill\\_id=201720180SB100](https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB100). Accessed August 2019.

<sup>52</sup> California Air Resources Board, Clean Car Standards – Pavley, Assembly Bill 1493. Available at: <http://www.arb.ca.gov/cc/ccms/ccms.htm>, last reviewed January 11, 2017. Accessed August 2019.

<sup>53</sup> United States Environmental Protection Agency, EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks, 2012. Available at: <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100EZ7C.PDF?Dockey=P100EZ7C.PDF>. Accessed August 2019.



## ENVIRONMENTAL IMPACT ANALYSIS

California Air Resources Board

*Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling*

In 2004, the CARB adopted an Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling in order to reduce public exposure to diesel particulate matter emissions (CCR, Title 13, Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure does not allow diesel-fueled commercial vehicles to idle for more than five minutes at any given location. While the goal of this measure is primarily to reduce public health impacts from diesel emissions, compliance with the regulation also results in energy savings in the form of reduced fuel consumption from unnecessary idling.

*Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and other Criteria Pollutants, from In-Use Heavy-Duty Diesel-Fueled Vehicles*

In addition to limiting exhaust from idling trucks, CARB also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower (hp) such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The In-Use Off-Road Diesel-Fueled Fleets regulation adopted by CARB on July 26, 2007 aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models (13 CCR Section 2449). The compliance schedule requires full implementation by 2023 in all equipment for large and medium fleets and by 2028 for small fleets. While the goal of this measure is primarily to reduce public health impacts from diesel emissions, compliance with the regulation has shown an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines.

Senate Bill 375 /Sustainable Communities Strategy

SB 375, the Sustainable Communities and Climate Protection Act of 2008, coordinates land use planning, regional transportation plans, and funding priorities to help California meet the GHG reduction mandates of AB 32. SB 375 specifically requires the Metropolitan Planning Organization (MPO) to prepare a “sustainable communities strategy” (SCS) as a part of its Regional Transportation Plan (RTP) that will achieve GHG emission reduction targets set by CARB for the years 2020 and 2035 by reducing VMT from light-duty vehicles through the development of more compact, complete and efficient communities. The Project Site is located within the planning jurisdiction of the Southern California Association of Governments (SCAG), which is the MPO responsible for the preparation of the SCS. SCAG’s has most recently adopted the 2016-2040 RTP/SCS, with a number of goals focusing on transportation and land use planning.<sup>54</sup>

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<sup>54</sup> Southern California Association of Governments, 2016 – 2040 Regional Transportation Plan/ Sustainable Communities Strategy. Available at: <http://scagtrpccs.net/Pages/FINAL2016RTPSCS.aspx>. Accessed August 2019.



## ENVIRONMENTAL IMPACT ANALYSIS

### Senate Bill 1389 /Integrated Energy Policy Reporting

SB 1389 (Public Resources Code [PRC] Sections 25300–25323; SB 1389) requires CEC to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety (PRC Section 25301[a]). The 2015 Integrated Energy Policy Report provides the results of the CEC's assessments of a variety of energy issues facing California including energy efficiency, strategies related to data for improved decisions in the Existing Buildings Energy Efficiency Action Plan, building energy efficiency standards, the impact of drought on California's energy system, achieving 50 percent renewables by 2030, the California Energy Demand Forecast, the Natural Gas Outlook, the Transportation Energy Demand Forecast, Alternative and Renewable Fuel and Vehicle Technology Program benefits updates, update on electricity infrastructure in Southern California, an update on trends in California's sources of crude oil, an update on California's nuclear plants, and other energy issues.<sup>55</sup>

### California Environmental Quality Act

In accordance with the CEQA Guidelines, including Appendix F, *Energy Conservation*, in order to assure that energy implications are considered in project decisions, EIRs are required to include a discussion of the potential significant energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. Appendix F of the CEQA Guidelines provides a list of energy-related topics that should be analyzed in the EIR. In addition, while not described or required as significance thresholds for determining the significance of impacts related to energy, Appendix F provides the following topics that the lead agency may consider in the discussion of energy use in an EIR, where topics are applicable or relevant to the project:

- The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance, and/or removal. If appropriate, the energy intensiveness of materials may be discussed;
- The effects of the project on local and regional energy supplies and on requirements for additional capacity;
- The effects of the project on peak and base period demands for electricity and other forms of energy;
- The degree to which the project complies with existing energy standards;
- The effects of the project on energy resources;
- The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives;
- The degree to which the project design and/or operations incorporate energy-conservation measures, particularly those that go beyond City requirements; and
- Whether the project conflicts with adopted energy conservation plans.

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<sup>55</sup> California Legislative Information, SB 1389 (Public Resources Code Section 25300 – 25323). Available at: [http://www.leginfo.ca.gov/pub/0102/bill/sen/sb\\_13511400/sb\\_1389\\_bill\\_20020915\\_chaptered.html](http://www.leginfo.ca.gov/pub/0102/bill/sen/sb_13511400/sb_1389_bill_20020915_chaptered.html). Accessed August 2019.





ENVIRONMENTAL IMPACT ANALYSIS

**4.4.2.3 Regional**

Southern California Gas

SoCalGas, along with five other utility providers released the 2018 California Gas Report, presenting a comprehensive outlook for natural gas supplies and requirements for California through the year 2035. The report predicts gas demand for all sectors and presents best estimates, as well as hot and cold year scenarios. Overall, SoCalGas predicts a decrease in natural gas demand in future years, due to a decrease in per capita usage, energy efficiency policies, and California's transition to renewable energy displacing fossil fuel use, including natural gas.<sup>56</sup>

**4.4.2.4 Local**

Greener Glendale Plan for Community Activities

The Greener Glendale Plan for Community Activities, adopted by the City Council on March 27, 2012, is the City's plan for helping its residents achieve better sustainability. The Greener Glendale Plan for Community Activities provides objectives and strategies for increased sustainability within the City, assesses what actions the City and community have already taken to be more sustainable, and recommends how to build on these efforts, such as using biogas to create clean, renewable energy. The Greener Glendale Plan for Community Activities includes focus areas addressing environmental issues including, but not limited to, energy use, water supplies, solid waste and recycling, transportation, urban design, urban nature, environmental health and economic development. Based on the City's forecasts and reduction targets, the City is on track to meet SCAG's regional GHG reduction targets of eight percent by 2020 and 13 percent by 2023. The City's goal is to achieve a 25 percent reduction in transportation related GHGs by 2020, and an additional 10 percent by 2035, in order to meet RPS goals and AB 1493 standards.<sup>57</sup>

Greener Glendale Plan for Municipal Operations

The Greener Glendale Plan for Municipal Operations, adopted by the City Council on November 1, 2011, is the City's plan for achieving better sustainability in municipal operations. The Greener Glendale Plan for Municipal Operations indicated that the City of Glendale has already completed or initiated many sustainability programs, achieving overall energy and water consumption reductions in its buildings, even though there was an increase in public services, including a 30 percent growth in the municipal vehicle fleet and the opening of a new Glendale Police Department building. The Greener Glendale Plan for Municipal Operations includes the same focus areas as the Greener Glendale Plan for Community

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<sup>56</sup> California Gas and Electric Utilities, 2018 California Gas Report. Available at: [https://www.socalgas.com/regulatory/documents/cgr/2018\\_California\\_Gas\\_Report.pdf](https://www.socalgas.com/regulatory/documents/cgr/2018_California_Gas_Report.pdf). Accessed August 2019.

<sup>57</sup> City of Glendale Community Development Department, Greener Glendale Plan, The City of Glendale's Sustainability Plan for Community Activities, Adopted by the Glendale City Council on March 27, 2012. Available at: <https://www.glendaleca.gov/home/showdocument?id=6934>. Accessed August 2019.



## ENVIRONMENTAL IMPACT ANALYSIS

Activities, with an additional focus on climate change adaptation and adherence to climate change policies.<sup>58</sup>

### Glendale Green Building Standards

The City adopted 12 measures, in addition to the mandatory CALGreen Code, for new projects, which went into effect on July 7, 2011. These measures include requirements to reduce consumption of electricity and NG by 15 percent more than the California Energy Code standards, among others.<sup>59</sup>

### Glendale Solid Waste and Construction Waste Diversion Programs

The recycling of solid waste materials also contributes to reduced energy consumption. Specifically, when products are manufactured using recycled materials, the amount of energy that would have otherwise been consumed to extract and process virgin source materials is reduced. For example, in 2015, 3.61 million tons of aluminum were produced by recycling in the United States, saving enough energy to provide electricity to 7.5 million homes.<sup>60</sup> In 1989, California enacted AB 939, the California Integrated Waste Management Act which establishes a hierarchy for waste management practices such as source reduction, recycling, and environmentally safe land disposal.<sup>61</sup> Importantly the City requires the diversion of at least 65 percent of construction and demolition debris from a landfill, through recycling, salvage or deconstruction. Compliance with this requirement must be documented.<sup>62</sup>

## 4.4.3 Methodology and Thresholds of Significance

### 4.4.3.1 Methodology

This analysis addresses the proposed Project's potential energy usage, including electricity, natural gas, and transportation fuel. Energy consumption during both construction and operation is assessed.

#### Construction

Energy consumed during Project construction would primarily include petroleum fuels used in off-road construction equipment and on-road motor vehicles. Limited amounts of indirect electricity associated with water use and wastewater treatment would also be consumed during the approximate 15- to 18-month construction duration.

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<sup>58</sup> City of Glendale Community Development Department, Greener Glendale Plan, The City of Glendale's Sustainability Plan for Municipal Operations. Adopted by the Glendale City Council on November 1, 2011. Available at: <https://www.glendaleca.gov/home/showdocument?id=6928>. Accessed August 2019.

<sup>59</sup> City of Glendale Green Building Standards, July 27, 2011. Available at: <https://www.glendaleca.gov/home/showdocument?id=6930>. Accessed August 2019.

<sup>60</sup> American Geosciences Institute, How Does Recycling Save Energy? Available at: <https://www.americangeosciences.org/critical-issues/faq/how-does-recycling-save-energy>. Accessed August 2019.

<sup>61</sup> CalRecycle, History of California Solid Waste Law, 1985–1989. Available at: <http://www.calrecycle.ca.gov/laws/legislation/calhist/1985to1989.htm>. Accessed August 2019.

<sup>62</sup> City of Glendale Construction and Demolition Debris Diversion Program, City of Glendale Ordinance 5895, Chapter 8.58. Available at: [http://qcode.us/codes/glendale/view.php?topic=8-8\\_58-8\\_58\\_050&frames=on](http://qcode.us/codes/glendale/view.php?topic=8-8_58-8_58_050&frames=on). Accessed August 2019.



## ENVIRONMENTAL IMPACT ANALYSIS

### Operation

Energy consumed during Project operation would include electricity usage associated with the LFG collection and processing equipment as well as some ancillary equipment used to support the power generation process. Electricity would also be used for security lighting, the storage room and office space for site operation and maintenance personnel, and indirect sources such as water use and wastewater treatment. Additionally, the LFG fuel stream to the generators may include up to ten percent (10%) natural gas as fuel augmentation. Transportation energy consumed during Project operation would be similar to the current baseline conditions, as there would be the same small number of site operators and workers required at the facility.

#### 4.4.3.2 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would have a significant impact related to energy if it would:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operations.
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

#### 4.4.4 Project Impacts

***Threshold: Would the Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operations?***

##### 4.4.4.1 Construction

Construction of the proposed Project would require little use of electricity to power construction and support equipment, which would be provided by portable generators that produce electricity from the combustion of petroleum fuel such as diesel. NG is not expected to be consumed in support of construction of the proposed Project. Construction would include the use of petroleum fuels such as diesel and gasoline in on-road vehicles and off-road conventional construction equipment such as graders, generators, pumps, air compressors, and similar equipment. The City proposes to utilize internal combustion engines in off-road construction equipment that meets USEPA Tier II emissions standards that are more fuel efficient than Tier I or non-tiered engines. Additionally, the CARB adopted Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling discussed above in the setting would require that diesel-fueled commercial vehicles used in support of construction idle for no longer than five minutes at any given location. Compliance with this regulation results in energy savings in the form of reduced fuel consumption from unnecessary idling. Considering the lack of electricity and NG needed to support construction as well as the short-term construction duration, use of Tier II engines, and compliance with diesel vehicle idling limits, construction of the proposed Project would have a less than significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources.



## ENVIRONMENTAL IMPACT ANALYSIS

### Mitigation Measures

No mitigation measures are required.

### Level of Significance After Mitigation

As discussed above, proposed Project construction would have a less than significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources and no mitigation measures are warranted.

#### 4.4.4.2 Operation

Operation of the proposed Project would require direct electricity to continue to operate the LFG collection system as well as the LFG treatment system and ancillary power generation equipment. Electricity would also be used to operate security lighting and electrical control equipment. There would also be some indirect energy consumption related to water use, wastewater treatment, and solid waste disposal; however, operation of the proposed Project would generate 12 MW of RPS eligible electricity from the combustion of the LFG rather than continuing to combust the LFG in flares with no energy generation benefit. Project operation would also utilize up to ten percent (10%) NG makeup to assist the internal combustion engine generators combust the LFG to generate electricity. Use of petroleum-based fuel such as diesel and gasoline in personnel vehicles and maintenance equipment would be similar to which occurs under existing LFG treatment activities. Therefore, operation of the proposed Project would have a less than significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. As discussed, proposed Project operation would have a less than significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources and no mitigation measures are warranted.

### Mitigation Measures

No mitigation measures are required.

### Level of Significance After Mitigation

Less than Significant Impact.

***Threshold: Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?***

#### 4.4.4.3 Construction

As discussed above, the City proposes to utilize internal combustion engines in off-road construction equipment that meets USEPA Tier II emissions standards and that more fuel efficient than Tier I or non-tiered engines. Additionally, adherence to the CARB adopted Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling discussed above in the setting would require that diesel-fueled commercial vehicles used in support of construction idle for no longer than five minutes at any given location. Compliance with this regulation results in energy savings in the form of reduced fuel consumption from unnecessary vehicle idling. Considering these efficiencies and short-term duration of



## ENVIRONMENTAL IMPACT ANALYSIS

construction activities, construction of the proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency and would have a less than significant impact. As discussed, Project construction would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency and would have a less than significant impact. No mitigation measures are warranted.

### Mitigation Measures

No mitigation measures are required.

### Level of Significance After Mitigation

Less than Significant Impact.

#### **4.4.4.4 Operation**

Under existing conditions, the LFG is combusted in flares at the Scholl Canyon Landfill (SCLF). The flaring of LFG does not provide any renewable energy or energy efficiency benefits. The Project includes combusting the LFG in internal combustion engine generators to produce 12 MW of RPS eligible electricity. The generation of 12 MW of electricity from the proposed Project would assist the City in meeting and exceeding the RPS requirements mandated by the State of California. As such, proposed Project operation would be consistent with state and local plans for renewable energy or energy efficiency and would have a less than significant impact. As discussed, proposed Project operation would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency and would have a less than significant impact. No mitigation measures are warranted.

### Mitigation Measures

No mitigation measures are required.

### Level of Significance After Mitigation

Less than Significant Impact.

#### **4.4.5 Cumulative Impacts**

This cumulative impact analysis evaluates the proposed Project's incremental contribution to a potentially significant energy-related cumulative impact when considered in combination with potential impacts of the proposed Grayson Repowering Project.

The Grayson Repowering Project would consume energy resources primarily including petroleum hydrocarbons during demolition and construction to fuel construction equipment and NG during operation to generate electricity. The Grayson Repowering Project involves replacing less energy efficient electrical generation equipment with more energy efficient electrical generation equipment. As a result, the Grayson Repowering Project would result in an improvement in long-term energy efficiency compared to existing power generation occurring at Grayson Power Plant.



**DRAFT ENVIRONMENTAL IMPACT REPORT  
CITY OF GLENDALE BIOGAS RENEWABLE GENERATION PROJECT**

**ENVIRONMENTAL IMPACT ANALYSIS**

The proposed Project would utilize renewable LFG to generate electricity to assist the City in RPS requirements compared to receiving no beneficial use from flaring the LFG under existing conditions. As a result, the proposed Project would result in an improvement in energy efficiency compared to baseline conditions. Considering this improvement as well as the energy benefits of the Grayson Repowering Project, the proposed Project would not result in a substantial contribution to a significant energy-related cumulative environmental impact and potential impacts would therefore be less than significant.

